

Advanced Manufacturing Technologies

Advanced manufacturing technologies (AMT) are used in the design, scheduling, production, storage and distribution of manufactured products. They include "hard" technologies such as computer-aided design (CAD) software, robotics, machine vision and computer-controlled machine tools and "soft" technologies such as concurrent engineering and just-in-time production. AMT, which use both information and microprocessor technologies, are increasingly powerful methods to integrate islands of automation into computer-integrated manufacturing systems.

International Environment

Technology innovation, trade liberalization and the globalization of business are transforming the nature of manufacturing, particularly in higher technology sectors such as electronics, aerospace and automotive. They rely heavily on AMT to maintain their competitive edge. Successful firms in all sectors are using AMT to introduce to global markets new, high-quality products. With AMT, they can be produced quickly, less expensively, in smaller lot sizes, and with more features.

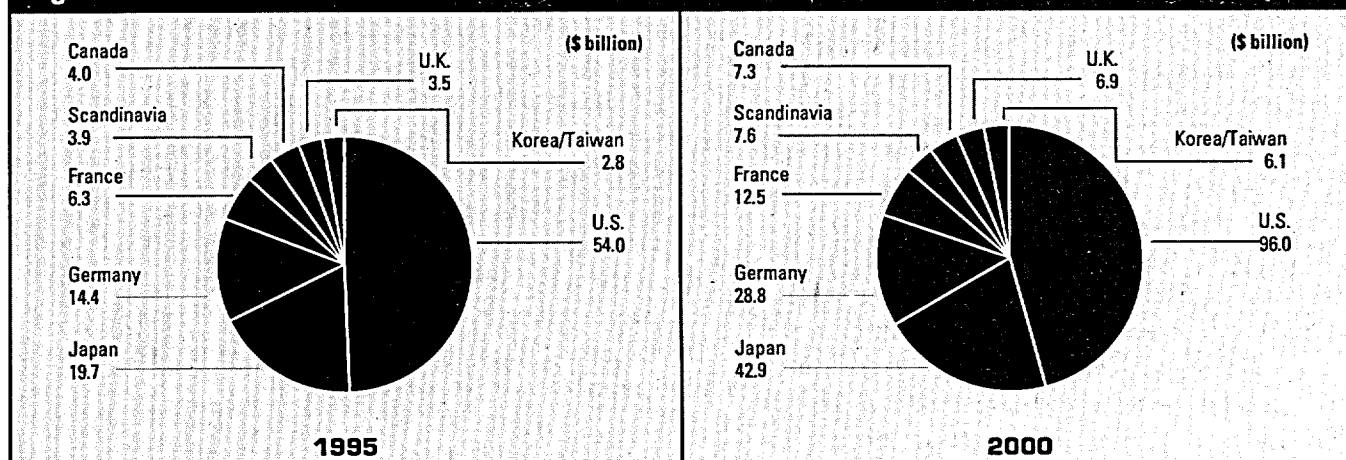
In 1990 worldwide investment in AMT products, services and systems was \$57 billion. Investment is increasing at a compound annual growth rate of 13 percent. By the year 2000 the market is expected to be \$208 billion. North America represents 53 percent of the world market. As Asian and European investment

continues to grow, however, their share is expected to increase to 52 percent by 2000.

The following figure projects AMT markets in major user countries to the year 2000.

Japan and Germany are leading exporters of AMT products. Japan is a leader in producing machining centres, industrial robots and flexible manufacturing systems, while Germany has established a lead in precision machining technologies and has built a strong export machine tool industry. Companies using and supplying AMT in these two countries have developed a lead over their competitors, through greater collaboration among firms and due to their ability to rapidly develop and apply new technologies. The United States dominates the factory systems market, primarily due to its strengths in the development of software and computer hardware.

Figure 1 — Worldwide AMT Markets



Source: Year 2000 Report